

# Top-Ported Pressure Filter

# VF60



## Features and Benefits

- Top-ported high pressure filter
- Threaded bowl for easy element servicing
- Offered in pipe, SAE straight thread and ISO 228 porting
- Various dirt alarm options available

**70 gpm**  
**265 L/min**  
**6000 psi**  
**415 bar**

NF30  
 NFS30  
 YF30  
 CFX30  
 PLD  
 DF40  
 CF40  
 PF40  
 RFS50  
 RF60  
 CF60  
 CTF60

Model No. of filter in photograph is VF609VZ105.



INDUSTRIAL



AUTOMOTIVE  
MANUFACTURING



MACHINE  
TOOL



MINING  
TECHNOLOGY



PULP & PAPER



AGRICULTURE



MOBILE  
VEHICLES

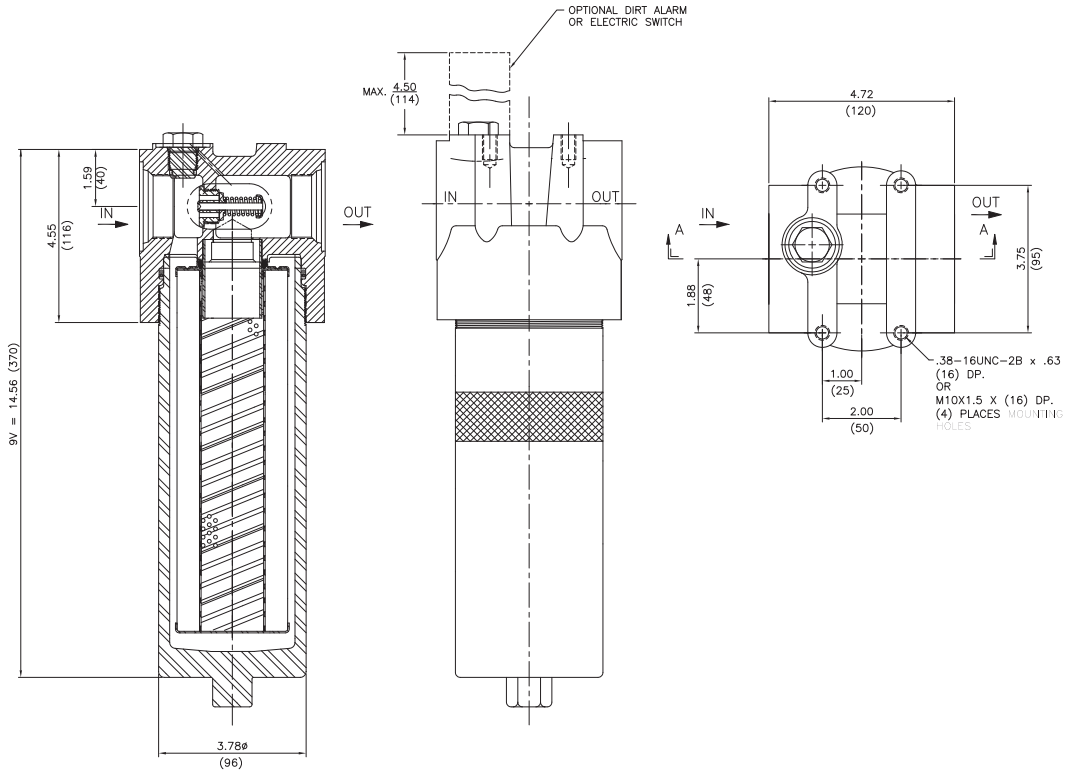
## Applications

**VF60**  
 LW60  
 KF30  
 TF50  
 KF50  
 KC50  
 MKF50  
 KC65  
 NOF30-05  
 NOF50-760  
 FOF60-03

|                           |   |
|---------------------------|---|
| Flow Rating:              | Up to 70 gpm (265 L/min) for 150 SUS (32 cSt) fluids      |
| Max. Operating Pressure:  | 6000 psi (415 bar)  |
| Min. Yield Pressure:      | 15,500 psi (1070 bar), per NFPA T2.6.1                    |
| Rated Fatigue Pressure:   | 3300 psi (230 bar), per NFPA T2.6.1-R1-2005               |
| Temp. Range:              | -20°F to 225°F (-29°C to 107°C)                           |
| Bypass Setting:           | Cracking: 50 psi (3.5 bar)<br>Full Flow: 65 psi (4.5 bar) |
| Porting Head:             | Ductile Iron  |
| Element Case:             | Steel   |
| Weight of VF60-9V:        | 24.0 lbs. (10.9 kg)                                       |
| Element Change Clearance: | 4.0" (103 mm)   |

## Filter Housing Specifications

NMF30  
 RMF60  
 Cartridge Elements  
 HS60  
 MHS60  
 KFH50



Metric dimensions in ( ).

## Element Performance Information

| Element | Filtration Ratio Per ISO 4572/NFPA T3.10.8.8<br>Using automated particle counter (APC) calibrated per ISO 4402 |                    |                    | Filtration Ratio wrt ISO 16889<br>Using APC calibrated per ISO 11171 |                        |
|---------|--|--------------------|--------------------|--|------------------------|
|         | $\beta_x \geq 75$  | $\beta_x \geq 100$ | $\beta_x \geq 200$ | $\beta_x(c) \geq 200$  | $\beta_x(c) \geq 1000$ |
| 9V3     | 6.8  | 7.5                | 10.0               | N/A  | N/A                    |
| 9V10    | 15.5   | 16.2               | 18.0               | N/A  | N/A                    |
| 9VZ1    | <1.0   | <1.0               | <1.0               | <4.0   | 4.2                    |
| 9VZ3    | <1.0   | <1.0               | <2.0               | <4.0   | 4.8                    |
| 9VZ5    | 2.5  | 3.0                | 4.0                | 4.8  | 6.3                    |
| 9VZ10   | 7.4  | 8.2                | 10.0               | 8.0  | 10.0                   |
| 9VZ25   | 18.0   | 20.0               | 22.5               | 19.0   | 24.0                   |

## Dirt Holding Capacity

| Element | DHC (gm) |
|---------|----------|
| 9V3     | 25       |
| 9V10    | 12       |
| 9VZ1    | 55       |
| 9VZ3    | 57       |
| 9VZ5    | 62       |
| 9VZ10   | 60       |
| 9VZ25   | 61       |

Element Collapse Rating: 150 psid (10 bar) for standard elements  
 Flow Direction: Outside In  
 Element Nominal Dimensions: 9V: 2.9" (75 mm) O.D. x 9.5" (240 mm) long

# Top-Ported Pressure Filter

# VF60

| Type Fluid             | Appropriate Schroeder Media  |
|------------------------|--|
| Petroleum Based Fluids | All E media (cellulose) and Z-Media® (synthetic)   |
| High Water Content     | All Z-Media® (synthetic)   |
| Invert Emulsions       | 10 and 25 μ Z-Media® (synthetic)   |
| Water Glycols          | 3, 5, 10 and 25 μ Z-Media® (synthetic)   |
| Phosphate Esters       | All Z-Media® (synthetic) with H (EPR) seal designation   |
| Skydrol®               | 3, 5, 10 and 25 μ Z-Media® (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior) |

**Fluid Compatibility**

NF30  
NFS30  
YF30  
CFX30  
PLD  
DF40

Skydrol® is a registered trademark of Solutia Inc.

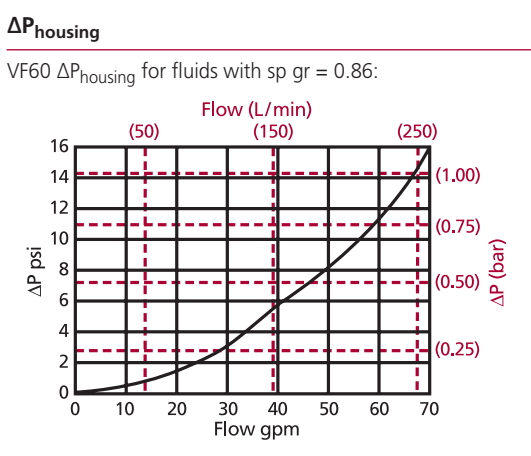
| Pressure                    | Element      |          | Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 50 psi (3.5 bar) bypass valve. |                 |     |     |     |    |    |
|-----------------------------|--------------|----------|---|-----------------|-----|-----|-----|----|----|
|                             | Series       | Part No. |   |                 |     |     |     |    |    |
| To<br>6000 psi<br>(415 bar) | Z-<br>Media® | 9VZ1     | 9VZ1  | Contact Factory |     |     |     |    |    |
|                             |              | 9VZ3     | 9VZ3  |                 |     |     |     |    |    |
|                             |              | 9VZ5     | 9VZ5  |                 |     |     |     |    |    |
|                             |              | 9VZ10    | 9VZ10   |                 |     |     |     |    |    |
|                             |              | 9VZ25    | 9VZ25   |                 |     |     |     |    |    |
| Flow                        | gpm          | 0        | 10  | 20              | 30  | 40  | 50  | 60 | 70 |
|                             | (L/min)      | 0        | 50  | 100             | 150 | 200 | 265 |    |    |

**Element Selection Based on Flow Rate**

CF40  
PF40  
RFS50  
RF60  
CF60  
CTF60

Shown above are the elements most commonly used in this housing.

Note: Contact factory regarding use of E Media in High Water Content, Invert Emulsion and Water Glycol Applications. For more information, refer to Fluid Compatibility: Fire Resistant Fluids, pages 19 and 20.



**ΔP<sub>element</sub>**

ΔP<sub>element</sub> = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

|       | 9V  |
|-------|-----|
| 9V3   | .32 |
| 9V10  | .24 |
| 9VZ1  | .34 |
| 9VZ3  | .21 |
| 9VZ5  | .13 |
| 9VZ10 | .11 |
| 9VZ25 | .06 |

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor: Divide viscosity by 150 SUS (32 cSt).

**Pressure Drop Information Based on Flow Rate and Viscosity**

LW60  
KF30  
TF50  
KF50  
KC50  
MKF50  
KC65

sp gr = specific gravity

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

| Notes |
|-------|
|       |
|       |
|       |
|       |
|       |

**ΔP<sub>filter</sub> = ΔP<sub>housing</sub> + ΔP<sub>element</sub>**

**Exercise:**  
Determine ΔP at 40 gpm (150 L/min) for VF609VZ3SD5 using 200 SUS (44 cSt) fluid.

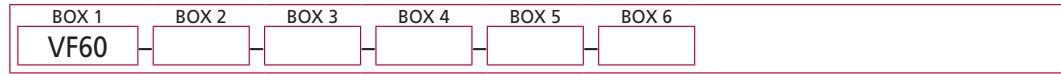
**Solution:**

ΔP<sub>housing</sub> = 6.0 psi [.38 bar]  
 ΔP<sub>element</sub> = 40 x .21 x (200÷150) = 11.2 psi  
 or  
 = [150 x (.21÷54.9) x (44÷32) = .79 bar]  
 ΔP<sub>total</sub> = 6.0 + 11.2 = 17.2 psi  
 or  
 = [.38 + .79 = 1.17 bar]

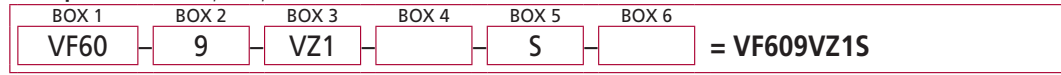
NOF30-05  
NOF50-760  
FOF60-03  
NMF30  
RMF60  
Cartridge Elements  
HS60  
MHS60  
KFH50

## Filter Model Number Selection

### How to Build a Valid Model Number for a Schroeder VF60:



**Example:** NOTE: One option per box



| BOX 1                | BOX 2                      | BOX 3   | BOX 4                                  |
|----------------------|----------------------------|---|--|
| <b>Filter Series</b> | <b>Element Length (in)</b> | <b>Element Size and Media</b>   | <b>Seal Material</b>                   |
| VF60                 | 9                          | V3 = V size 3 μ E media (cellulose)<br>V10 = V size 10 μ E media (cellulose)<br>VZ1 = V size 1 μ Excellement® Z-Media® (synthetic)<br>VZ3 = V size 3 μ Excellement® Z-Media® (synthetic)<br>VZ5 = V size 5 μ Excellement® Z-Media® (synthetic)<br>VZ10 = V size 10 μ Excellement® Z-Media® (synthetic)<br>VZ25 = V size 25 μ Excellement® Z-Media® (synthetic)<br>VM150 = V size 150 μ M media (reusable metal) | Omit = Buna N<br>V = Viton®<br>H = EPR |

| BOX 5             | BOX 6  |
|-------------------|--|
| <b>Inlet Port</b> | <b>Dirt Alarm® Options</b>   |
| P = 1¼" NPTF      | Omit = None  |
| S = SAE-20        | Visual = D5 = Visual pop-up  |
| B = ISO 228 G-1¼" | Visual with Thermal Lockout = D8 = Visual w/ thermal lockout   |
|                   | Electrical<br>MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable<br>MS5LC = Low current MS5<br>MS10 = Electrical w/ DIN connector (male end only)<br>MS10LC = Low current MS10<br>MS11 = Electrical w/ 12 ft. 4-conductor wire<br>MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only)<br>MS12LC = Low current MS12<br>MS16 = Electrical w/ weather-packed sealed connector<br>MS16LC = Low current MS16<br>MS17LC = Electrical w/ 4 pin Brad Harrison male connector |
|                   | Electrical with Thermal Lockout<br>MS5T = MS5 (see above) w/ thermal lockout<br>MS5LCT = Low current MS5T<br>MS10T = MS10 (see above) w/ thermal lockout<br>MS10LCT = Low current MS10T<br>MS12T = MS12 (see above) w/ thermal lockout<br>MS12LCT = Low current MS12T<br>MS16T = MS16 (see above) w/ thermal lockout<br>MS16LCT = Low current MS16T<br>MS17LCT = Low current MS17T   |
|                   | Electrical Visual<br>MS13 = Supplied w/ threaded connector & light<br>MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)  |
|                   | Electrical Visual with Thermal Lockout<br>MS13DCT = MS13 (see above), direct current, w/ thermal lockout<br>MS13DCLCT = Low current MS13DCT<br>MS14DCT = MS14 (see above), direct current, w/ thermal lockout<br>MS14DCLCT = Low current MS14DCT   |

**NOTES:**

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, and 4.  
 Example: 9VZ1V  
 E media (cellulose) elements are only available with Buna N seals.

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 5. B porting option supplied with metric mounting holes.